



APECS Bulgaria: Association of polar early career scientists in Bulgaria

АПЕКС България: Асоциация на младите полярни изследователи в България

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About us

APECS is an international and interdisciplinary organization for undergraduate and graduate students, postdoctoral researchers, early faculty members, educators and others with interests in Polar regions and the wider cryosphere.

APECS Bulgaria is a National Committee of APECS International and is supported by the Bulgarian Antarctic Institute (BAI). Although Bulgaria is far from the Polar regions, the country has many years of history in the Antarctic research. Since 1993 Bulgaria held 23 scientific Antarctic campaigns and maintains the Bulgarian Antarctic Base “St. Kliment Ohridski” on Livingston Island, South Shetland Islands. The main research topics of Bulgarian scientists cover: Earth sciences – such as geology, geophysics, physics, glaciology, meteorology, cartography; Life sciences – zoology, botanics, ecology and human medicine.

APECS Bulgaria members are young scientists (students, PhD students, and assistant professors) and mentors with different fields of interest – geologists, geochemists, biologists, geodesists, and physicists from accredited universities and science institutions in Bulgaria.

The aims of APECS Bulgaria are to stimulate international research collaborations, and develop effective future leaders in polar research, education and outreach. The members of APECS Bulgaria seek to achieve these aims by: facilitating international and interdisciplinary networking to share ideas and experiences and to develop new research directions, providing opportunities for professional career development, and promoting education and outreach as an integral component of polar research and to stimulate future generations of polar researchers.

Education and outreach activities

The major initiatives that APECS Bulgaria undertook 2014–2015 were to participate in *International Antarctica Day*, *Spring Polar week*, *Sofia Science Festival*, *Researcher’s Night* and *Fall Polar Week*.

The events for *International Antarctica Day* included a seminar and photo exhibition at the Sofia University “St. Kliment Ohridski”, talks by early career scientists, a presentation of educational activities of APECS Bulgaria and an interview with Zlatil Vergilov one of the first Bulgarian geologists and artists in Antarctica. Bulgarian children drew designs of Antarctic flag which were exhibited in front of the Bulgarian Antarctic Base on Livingston Island, South Shetlands.

More than ten lectures for *Spring Polar week* were held in two schools in the cities of Sofia, Kardzhali and Veliko Tarnovo.

The annual four day *Sofia Science Festival* organized by the British Council takes place in May 2014 and 2015. APECS Bulgaria teamed up with British Council to promote polar science communication including interesting scientific experiments: what is caldera and how it is formed, how to measure with a ruler the weight of a stone, how physical and optical properties of minerals help us to identify different minerals, how to make snow or fossils, how to work with surveying instruments, to tie alpine and marine units, talks about polar explorers, polar books and films, funny polar games and quizzes for kids and the general public.

APECS Bulgaria participated in *Polar Week*. One of the events is the *European Researcher’s Night* in Sofia with main topic „Light“. We show how we measure distance by light in Antarctica and how min-

erals “glow” under ultraviolet light (luminescence). The *Family Saturday* is a common event with the National Polytechnic Museum dedicated to the Polar Regions of the planet. The program includes lectures, demonstrations and scientific experiments for children aged 7–15 years. An article about Third Pole developed by Asparuh Kamburov became a main topic in the September issue of “BBC Knowledge”. Several issues of the magazine were given as a prize to the children during the two polar events.

The APECS Bulgaria Vicepresident Asparuh Kamburov won the hard *competition of National Geographic Chanel for a Bulgarian young explorer*.

APECS Bulgaria invited and was proud to be the host of the *First APECS World Summit “The Future of Polar Research”* in Sofia. To strengthen the communication and interaction between the National Committees and the APECS International leadership, thanks to many sponsors, the international organizing committee, and APECS Bulgaria, APECS organized the first APECS World Summit in Sofia, Bulgaria, on June 6–8, 2015. This event brought together 66 participants from 25 countries. We discussed data management and sharing, science communication, the future of polar research and of APECS. We also took this opportunity to formalize relationships between APECS International and many of our National Committees through the signing of partnership agreements. The APECS President for 2014–2015 Jean-Sébastien Moore noted in APECS Annual Report: „More importantly, members from all over the world met each other and shared good times, amazing Bulgarian food, and rakia! Nazdrave!“

Geologists in APECS Bulgaria and their activities

The majority of APECS Bulgaria members are geologists working in different fields of geology – mineralogy, economic geology, volcanology, paleontology, geochemistry, and structural geology. The main aim of the geological team in APECS Bulgaria is to present science in engaging ways and to promote geology

of Arctic and Antarctic regions, and Third Pole among children and even their parents.

Mineralogy is a fundamental discipline in geological and polar education. First step for the future scientists is the identifying of minerals by different optical and physical properties such as density, hardness, cleavage, luster, color, streak, and luminescence. And children already recognize a lot of minerals all alone by using Mohs scale, lens, unglazed porcelain plate and ultraviolet (UV) light.

Palaeontological research has future in Antarctic regions. For this reason palaeontologists show to children how to create their own fossils. With modelling materials they make moulds (or casts) using natural fossils imprints of different invertebrates, mainly ammonites, bivalves, gastropods, and trilobites. Moreover most of them can recognize the fossil’s genus.

Another engaging scientific experiment shows origin of volcanic caldera (caldera collapse) in box filled with flour and a balloon. This demonstration explains the formation of Deception Island which is a caldera of an active volcano in the South Shetland Islands, Antarctica.

Future work

Finally, we want to share a few of the highlights for the upcoming year. First of all we have to expand our education and outreach activities. One new initiative will be the construction of interactive models for visualization of different processes and phenomena in Polar regions. A model of Antarctic continent and adjacent islands with geographical and topographical information, ice sheet width, position and names of the ice shelves and etc. will be created. Other future project is the realization of a scientific experiment demonstrating Aurora Borealis – Northern (Polar) lights.

The most important will be the upcoming polar explorations of a young team of geologists and also APECS members. Their new observations, experience and specimens will help for better understanding and respectively promoting Polar regions.